IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims 2 and 4 in accordance with the following:

2. **(currently amended)** A data reproducing apparatus comprising:

an equalizer which equalizes an input digital signal; ~~and~~

a data detector which detects the equalized digital signal based on partial response maximum likelihood; and

a level decision unit which detects levels corresponding to decision levels used in the data detector from the output of the equalizer and feeds back corrected decision levels to the data detector, the corrected decision levels adaptively varying with the output level of the equalizer, wherein the level decision unit comprises:

a plurality of delay units which temporarily store sequential ones of the equalized digital signals;

a level detector which compares consecutive two or three sample data provided from the plurality of delay units to detect decision levels used in the data detector and which outputs a plurality of level decision enable signals and a plurality of selection signals;

a multiplexer which selectively outputs the outputs of the plurality of delay units in response to the selection signals; and

a plurality of averagers each of which averages the outputs of the multiplexer on being enabled by one of the plurality of enable signals and feeds back an averaged corrected decision level as the corrected decision level to the data detector.

3. **(original)** The data reproducing apparatus of claim 2, wherein the data detector is a PR(a, b, a) type.

4. **(currently amended)** The data reproducing apparatus of claim 3, wherein the level detector determines that zero cross occurs at a point where a product of two consecutive sample data output from ones of the plurality of delay units is smaller than 0 and detects one of

the two sample data as a positive medium level and the other as ~~a medium~~ a negative medium level.

5. **(original)** The data reproducing apparatus of claim 3, wherein the level detector detects the central sample data among three consecutive sample data output from the plurality of delay units as a positive maximum level where all the three sample data are larger than a predetermined threshold, and detects the central sample data as a negative maximum level where all the three sample data are smaller than the predetermined threshold.

6. **(original)** The data reproducing apparatus of claim 2, wherein the data detector is a PR(a, b, b, a) type.

7. **(original)** The data reproducing apparatus of claim 6, wherein the level detector:

determines that zero cross occurs at a point where the product of two consecutive sample data output from ones of the plurality of delay units is equal to or smaller than 0,

compares the absolute values of the two sample data, detects the sample data having the absolute value which is equal to or larger than the absolute value of the other of the two sample data as a positive medium level where the sample data having the absolute value which is equal to or larger than the absolute value of the other of the two sample data is larger than 0 and as a negative medium level where the sample data having the absolute value which is equal to or larger than the absolute value of the other of the two sample data is smaller than 0,

detects sample data preceding the compared two sample data as a negative or positive medium level where the latter sample data between the two consecutive sample data is larger than 0, and

detects sample data succeeding the compared two sample data as a negative or positive medium level where the former sample data between the two consecutive sample data is larger than 0.

8. **(original)** The data reproducing apparatus of claim 6, wherein the level detector: detects the central sample data among three consecutive sample data output from the plurality of delay units as a positive maximum level where all the three sample data are larger than a predetermined threshold, and

detects the central sample data as a negative maximum level where all the three sample

data are smaller than the predetermined threshold.

9. (**original**) The data reproducing apparatus of claim 6, wherein the level detector:

determines that zero cross occurs at a point where the product of two consecutive sample data output from ones of the plurality of delay units is equal to or smaller than 0; and

detects as a zero level the sample data of the two consecutive sample data having an absolute value which is smaller than the absolute value of the other of the two consecutive sample data.

10. (**previously presented**) A data reproducing apparatus comprising:

a sampler which samples an input radio frequency (RF) signal and provides sample data;

a direct current (DC) offset compensator which eliminates a DC offset from the sample data and outputs a compensated digital signal;

an equalizer which equalizes the compensated digital signal;

a data detector which detects the equalized digital signal based on partial response maximum likelihood;

a level error detector which detects levels corresponding to decision levels used in the data detector from the equalized digital signal and detects level errors between the detected levels and predetermined reference values;

a level decision unit which detects levels corresponding to the decision levels used in the data detector from the output of the equalizer and feeds back corrected decision levels to the data detector, the corrected decision levels adaptively varying with the output level of the equalizer; and

an adaptive processor which provides an adaptive filter coefficient to the equalizer so that the differences between the level errors and target level values are minimized.

11. (**previously presented**) A data reproducing apparatus comprising:

a sampler which samples an input radio frequency (RF) signal and provides sample data;

a direct current (DC) offset compensator which eliminates a DC offset from the sample data and outputs a compensated digital signal;

an equalizer which equalizes the compensated digital signal;

a data detector which detects the equalized digital signal based on partial response maximum likelihood;

a level error detector which detects levels corresponding to decision levels used in the data detector from the equalized digital signal and detects level errors between the detected levels and predetermined reference values;

a level decision unit which detects levels corresponding to the decision levels used in the data detector from the output of the equalizer and feeds back corrected decision levels to the data detector, the corrected decision levels adaptively varying with the output level of the equalizer, wherein the level decision unit comprises:

first through fourth delay units which temporarily store a plurality of consecutive samples of the data output from the equalizer,

a level detector which compares consecutive two or three sample data of the plurality of consecutive samples output from some of the first through fourth delay units to detect the decision levels used in the data detector and provides first through fifth level decision enable signals and selection signals,

a multiplexer which selects one of the outputs of the first through fourth delay units in response to the selection signals and provides the selected output as a decision value of a level corresponding to the selection signals, and

first through fifth averagers which are enabled by the first through fifth level decision enable signals, respectively, and which provide averaged corrected positive and negative medium levels, averaged corrected positive and negative maximum levels and an averaged corrected zero level to the data detector, each of the first through fifth averagers averaging decision values of the level corresponding to the selection signals; and

an adaptive processor which provides an adaptive filter coefficient to the equalizer so that the differences between the level errors and target level values are minimized.

13. (**currently amended**) A method of reproducing data from an input digital signal based on partial response maximum likelihood, the method comprising:

equalizing the input digital signal to output an equalized signal;

detecting data from the equalized signal using decision levels; and

detecting levels corresponding to the decision levels from the equalized signal and adaptively varying the decision levels according to the detected levels, wherein the detecting of levels comprises:

temporarily storing a plurality of consecutive samples of the equalized data;

comparing two or three sample data of the consecutive data samples to detect

the decision levels used in the detecting of data and providing a plurality of level decision enable signals and selection signals;

selecting one among the consecutive data samples in response to the selection signals to output the selected sample data as the decision value of a level corresponding to the selection signals; and

averaging decision values of the level corresponding to the selection signals in response to one of the plurality of level decision enable signals to adaptively vary the decision levels of the data detector.

14. (**original**) The method of claim 13, wherein the data detector is a PR(a, b, a) type.

15. (**original**) The method of claim 14, wherein the comparing comprises:

determining that zero cross occurs at a point where a product of two consecutive sample data is smaller than 0;

detecting one of the two consecutive sample data as a positive medium level, and

detecting the other of the two consecutive sample data as a negative medium level.

16. (**original**) The method of claim 14, wherein the comparing comprises:

detecting central sample data among the three consecutive sample data provided as a positive maximum level where all the three consecutive sample data are larger than a predetermined threshold; and

detecting the central sample data as a negative maximum level where all the three consecutive sample data are smaller than the predetermined threshold.

17. (**original**) The method of claim 13, wherein the data detector is a PR(a, b, b, a) type.

18. (**original**) The method of claim 17, wherein the comparing comprises:

determining that zero cross occurs at a point where a product of two consecutive sample data is equal to or smaller than 0;

comparing the absolute value of the two consecutive sample data;

detecting one of the two consecutive sample data whose absolute value is equal to or larger than the absolute value of the other of the two consecutive sample data as a positive medium level where the one sample data is larger than 0 and detecting the one sample data as

a negative medium level where the one sample data is smaller than 0; and

detecting sample data preceding the compared two consecutive sample data as a negative or positive medium level where the latter sample data of the two consecutive sample data is larger than 0, and detecting sample data succeeding the compared two consecutive sample data as a negative or positive medium level where the former sample data of the two consecutive sample data is larger than 0.

19. (**original**) The method of claim 17, wherein the comparing comprises:

detecting a central sample data among the three consecutive sample data as a positive maximum level where all of the three consecutive sample data are larger than a predetermined threshold, and

detecting the central sample data as a negative maximum level where all of the three consecutive sample data are smaller than the predetermined threshold.

20. (**original**) The method of claim 17, wherein the comparing comprises:

determining that zero cross occurs at a point where the product of two consecutive sample data is equal to or smaller than 0, and the sample data whose absolute value is smaller than the absolute value of the other of the two sample data is detected as a zero level.

21. (**original**) A data reproducing apparatus comprising:

a partial response maximum likelihood (PMRL) detector which detects data from a digital signal based on a plurality of decision levels;

a level decision unit which detects a level in each sample of a plurality of groups of consecutive samples of the digital signal and selects respective samples of each group corresponding to respective ones of the plurality of decision levels; and

a plurality of averagers, each of which averages the corresponding selected respective samples of successive groups of consecutive samples and adjusts respective ones of the plurality of decision levels based on the respective averages.

22. (**original**) The data reproducing apparatus as claimed in claim 21, wherein a number of the plurality of decision levels is three.

23. (**original**) The data reproducing apparatus as claimed in claim 21, wherein a

number of the plurality of decision levels is five.

24. (**original**) A method of reproducing data from a digital signal based on partial response maximum likelihood (PMRL), the method comprising:

providing a data detector which detects data based on at least one decision level;

selecting a plurality of samples of the digital signal corresponding to the at least one decision level; and

averaging the selected plurality of samples and providing the average of the selected plurality of samples to the data detector as the at least one decision level.

25. (**original**) The method as claimed in claim 24, wherein:

the data detector detects data based on the at least one decision level and another decision level;

the selecting further comprises selecting a second plurality of samples corresponding to the another decision level; and

the averaging further comprises averaging the second selected plurality of samples and providing the average of the second plurality of samples to the data detector as the another decision level.